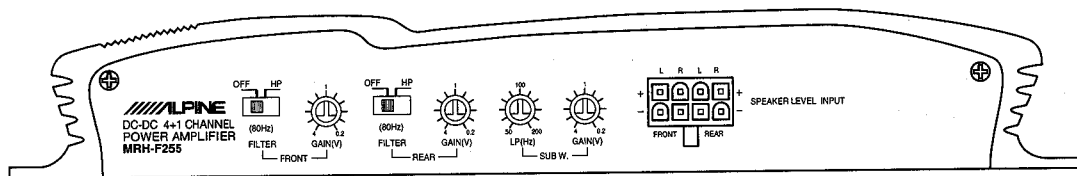


////ALPINE[®] **SERVICE MANUAL**

4 + 1 Channel Power Amplifier



MRH-F255

Contents

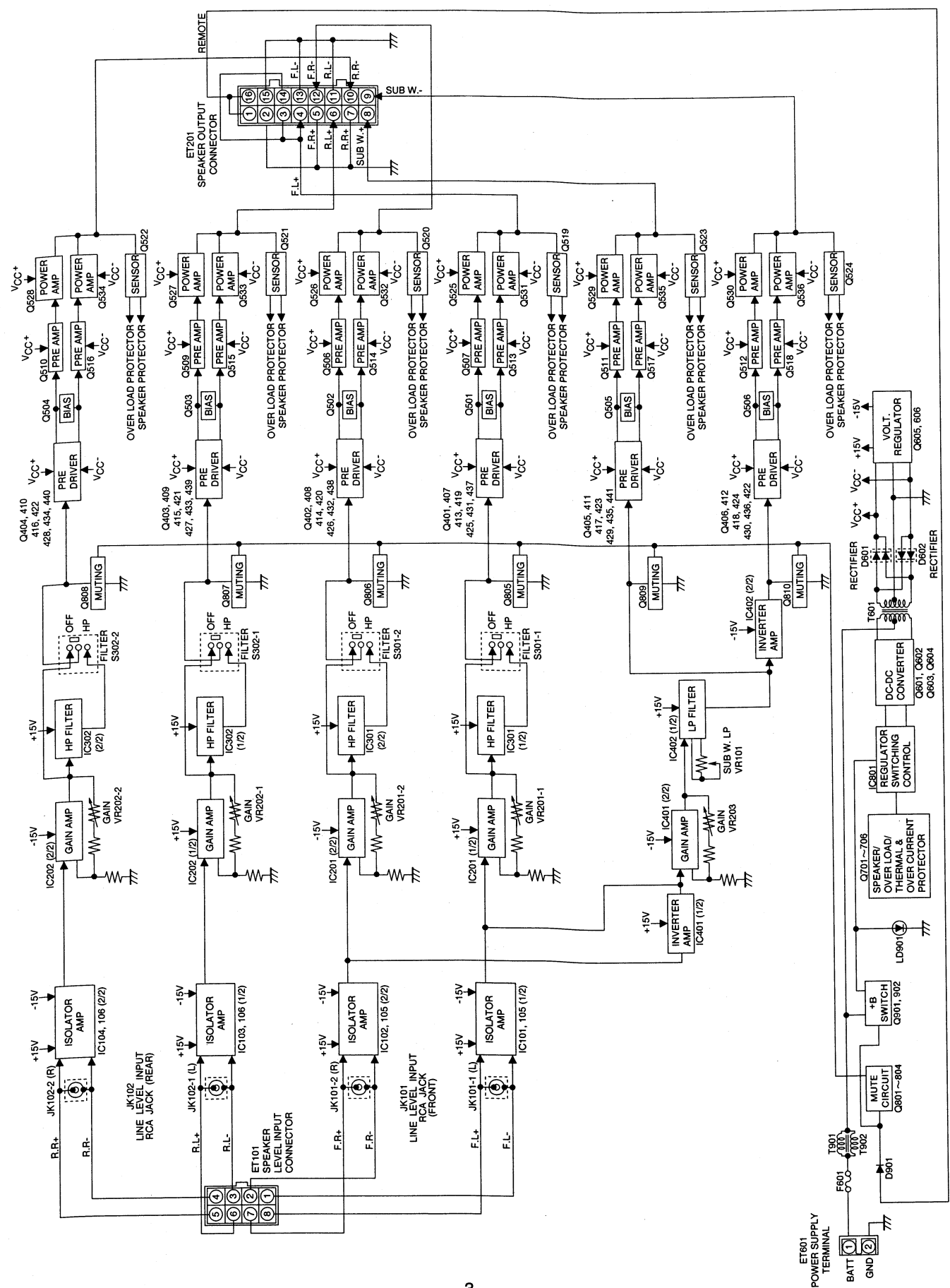
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Specifications

Power Output	4ohm-4channel, 0.2% (20Hz~20kHz) T.H.D. : 25W 2ohm-4channel, 1% (20Hz~20kHz) T.H.D. : 35W 4ohm-2channel, 1% (20Hz~20kHz) T.H.D., BTL : 70W 4ohm-1channel (SUB W.), 10% (20Hz) T.H.D., BTL : 100W (VR200Hz Max. Position)
S/N Ratio (25W/ch/4ohm, Input shorted)	94dB
Input Sensitivity (25W/ch Output)	RCA, CW : 0.2V±3dB RCA, Center : 1V±3dB RCA, CCW : 4V±3dB SP., CW : 0.4V±3dB SP., Center : 2V±3dB SP., CCW : 8V±3dB
Input Impedance	RCA : 10±2kohm SP. : 15±2ohm
Frequency Response (±1dB at 1kHz)	20Hz~40kHz
Current Drain	No Signal : 1.5A 4ohm-4channel, 10% T.H.D. : 25A
Residual Noise (Input shorted)	3mV
Channel Separation (Input Shorted, at 1kHz)	55dB
Fuse Requirement	25A (For Battery Line)
Power Source	DC14.4V (11~16V)
Semiconductors	13 IC's, 98 Transistors, 20 Diodes, 4 Zener Diodes, 4 FET's
Dimensions (W×H×D)	226×36×275mm
Weight	3.1kg

NOTE : Due to Continuing product improvement, specifications and designs are subject to change without notice.

Block Diagram

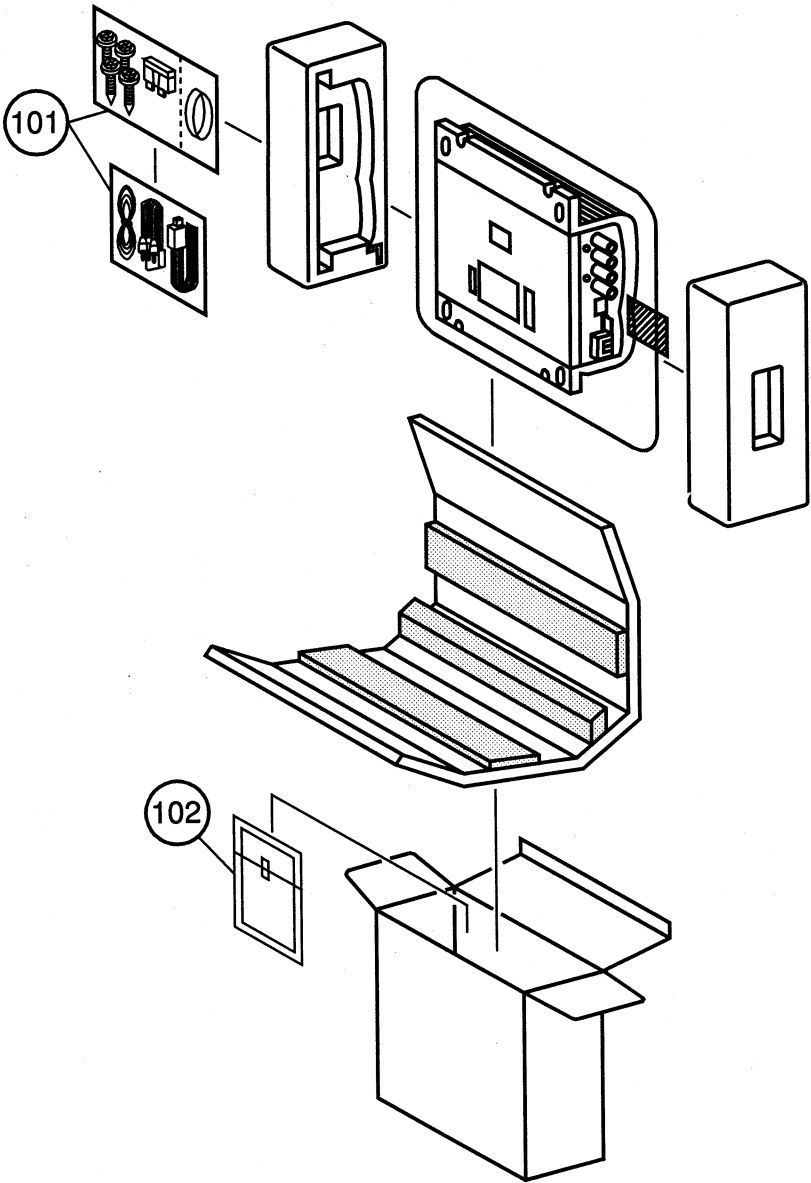


Packing Assembly Parts List

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
101-1	03E11447S01	Screw, TPG (M4×14)	102-1	68P80079W62	Owner's Manual
101-2	65S58596F07	Fuse, Auto 25A	△ 102-2	68P80079W63	Owner's Manual
101-3	01E23875S01	Assy., Input Wire			
101-4	01E23876S01	Assy., Output Wire			
101-5	01E11137S01	Assy., Battery Wire			
101-6	01E11138S01	Assy., GND Wire			

NOTE : ○ : For North American Model Only, △ : For General Foreign Model Only, Others : Common.

Packing Method View



All P.C. Boards viewed from soldered side.



G

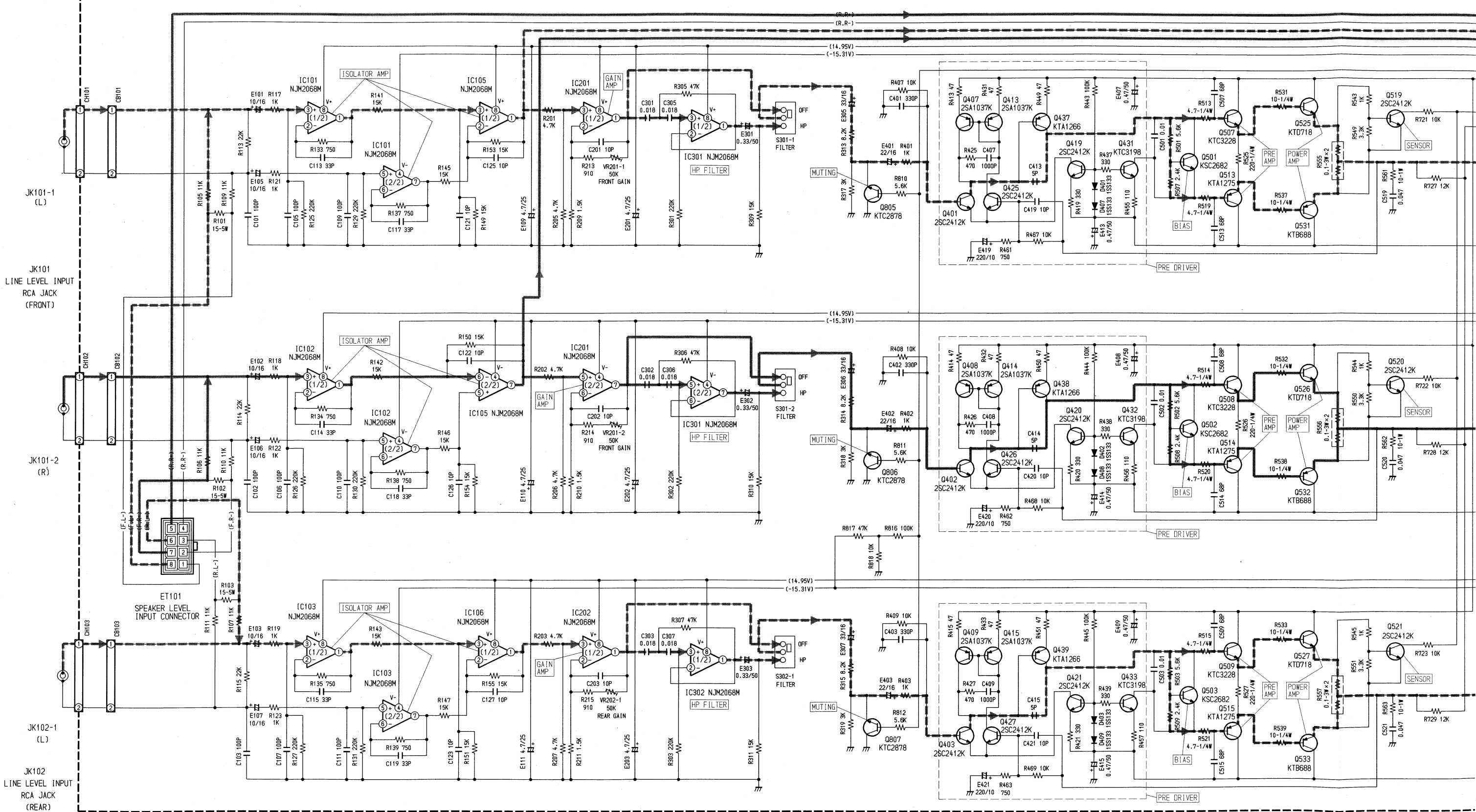
Blue Color Pattern : Foil Side Pattern

Schematic Diagram (1/2)

1

IC	IC101(1/2) IC103(1/2)	IC102(1/2)	IC101(2/2) IC103(2/2)	IC102(2/2)	IC105 IC106(1/2)	IC201 IC202(1/2)	IC301 IC302(1/2)																
Transistor (Q)								Q805	Q401	Q407	Q413	Q425	Q437	Q419	Q431	Q501	Q507	Q513	Q525	Q531	Q519		
								Q806	Q402	Q408	Q414	Q426	Q438	Q420	Q432	Q502	Q508	Q514	Q526	Q532	Q520		
								Q807	Q403	Q409	Q415	Q427	Q439	Q421	Q433	Q503	Q509	Q515	Q527	Q533	Q521		

Main P.C.Board (1/2)



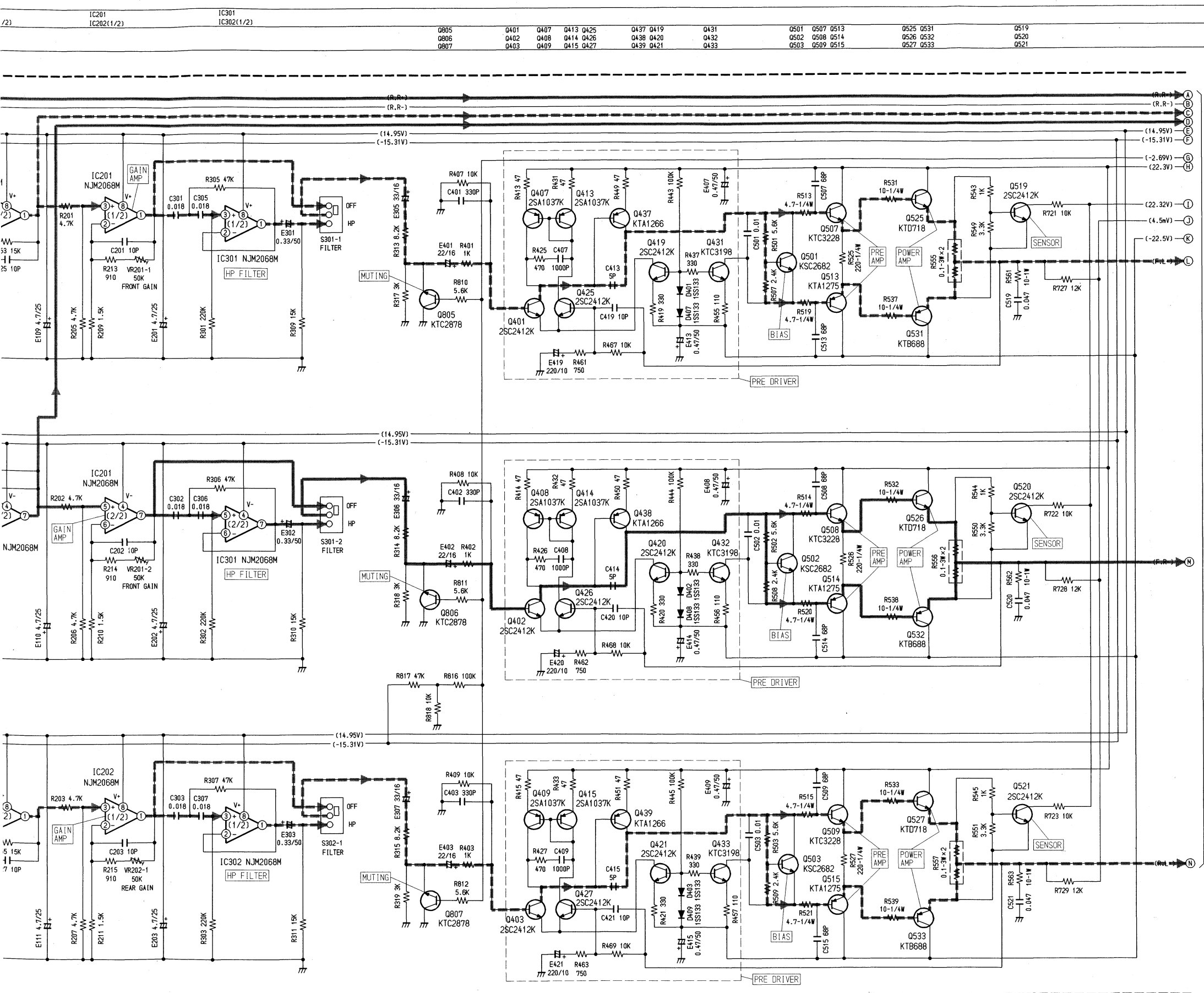
2

3

4

5

A | B - 7 - | C | D | E | F - 8 - | G | H



IC101		IC102		IC103		IC105	
1	48.3mV	1	48.8mV	1	47.56mV	1	1.1mV
2	48.5mV	2	48.5mV	2	47.5mV	2	25.3mV
3	48.8mV	3	48.8mV	3	47.8mV	3	25.4mV
4	-15.31V	4	-15.31V	4	-15.31V	4	-15.31V
5	49.3mV	5	49.2mV	5	49.3mV	5	26.2mV
6	48.8mV	6	47.5mV	6	48.5mV	6	25.1mV
7	48.3mV	7	47.5mV	7	48.5mV	7	3.1mV
8	14.96V	8	14.96V	8	14.96V	8	14.96V

IC106 (1/2)	IC201	IC301	IC302 (1/2)
1 2.1mV	1 5.9mV	1 45.9mV	1 7.4mV
2 27.5mV	2 2.22mV	2 45.9mV	2 2.9mV
3 26.1mV	3 1.8mV	3 45.9mV	3 1.9mV
8 14.96V	4 -15.31V	4 -15.31V	8 14.96V
	5 2.5mV	5 48.6mV	
	6 2.7mV	6 46.8mV	
	7 8.1mV	7 46.8mV	
	8 14.96V	8 14.96V	

	E	C	B		E	C	B
Q401	-0.52V	21.51V	-31.1mV	Q501	-1.08V	1.09V	-0.48V
Q402	-0.65V	21.61V	-31.3mV	Q502	-1.07V	1.08V	-0.45V
Q403	-0.67V	21.9V	-30.5mV	Q503	-1.09V	1.1V	-0.48V
Q407	22.2V	21.51V	21.65V	Q507	5.5V	22.3V	1.07V
Q408	22.2V	21.61V	21.65V	Q508	0.57V	22.3V	1.07V
Q409	22.2V	21.9V	21.8V	Q509	0.57V	22.3V	1.08V
Q413	22.2V	21.65V	21.65V	Q513	-5.3V	-22.3V	-1.04V
Q414	22.2V	21.65V	21.65V	Q514	-0.55V	-22.3V	-1.05V
Q415	22.2V	21.8V	21.8V	Q515	-0.53V	-22.3V	-1.04V
Q419	-21.8V	-0.52V	-21.2V	Q519	5.1mV	22.2V	5.1mV
Q420	-21.84V	-0.65V	-21.3V	Q520	5.5mV	22.2V	5.4mV
Q421	-21.82V	-0.67V	-21.4V	Q521	5.3mV	22.2V	5.5mV
Q425	-0.52V	21.65V	-21.6mV	Q525	7.8mV	22.3V	0.55V
Q426	-0.65V	21.65V	-21.9mV	Q526	7.8mV	22.3V	0.55V
Q427	-21.8mV	21.8V	-0.67V	Q527	7.7mV	22.3V	0.56V
Q431	-21.8V	-1.08V	-21.2V	Q531	5.1mV	-22.3V	-0.53V
Q432	-21.88V	-1.08V	-21.2V	Q532	5.5mV	-22.3V	-0.53V
Q433	-21.25V	-1.09V	-21.22V	Q533	5.3mV	-22.3V	-0.51V
Q437	22.2V	1.1V	21.51V	Q805	1.4mV	0V	-2.7V
Q438	22.2V	1.1V	21.61V	Q806	1.6mV	0V	-2.7V
Q439	22.2V	1.2V	21.9V	Q807	1.5mV	0V	-2.7V

[Measuring Conditions]

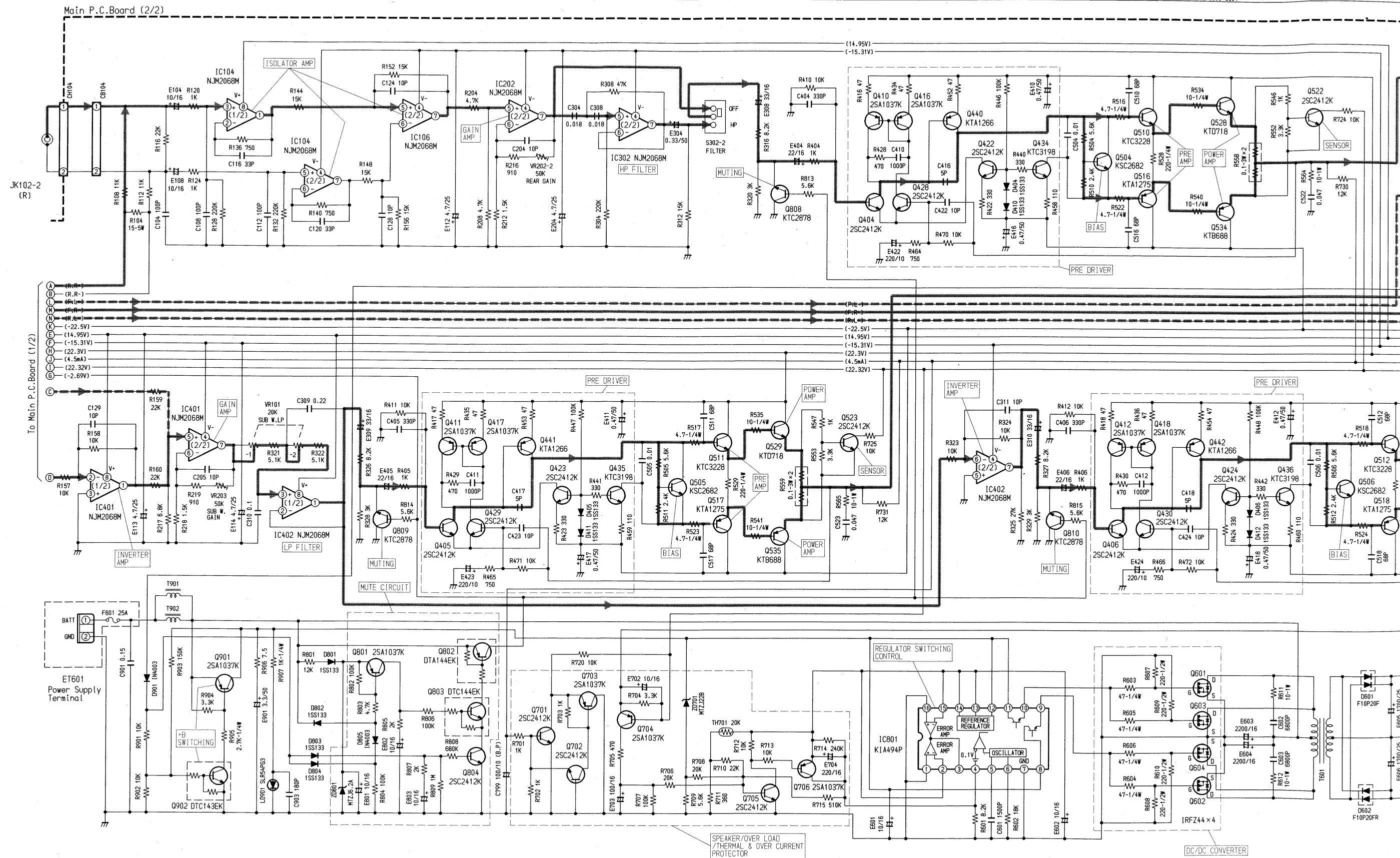
- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Meter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input

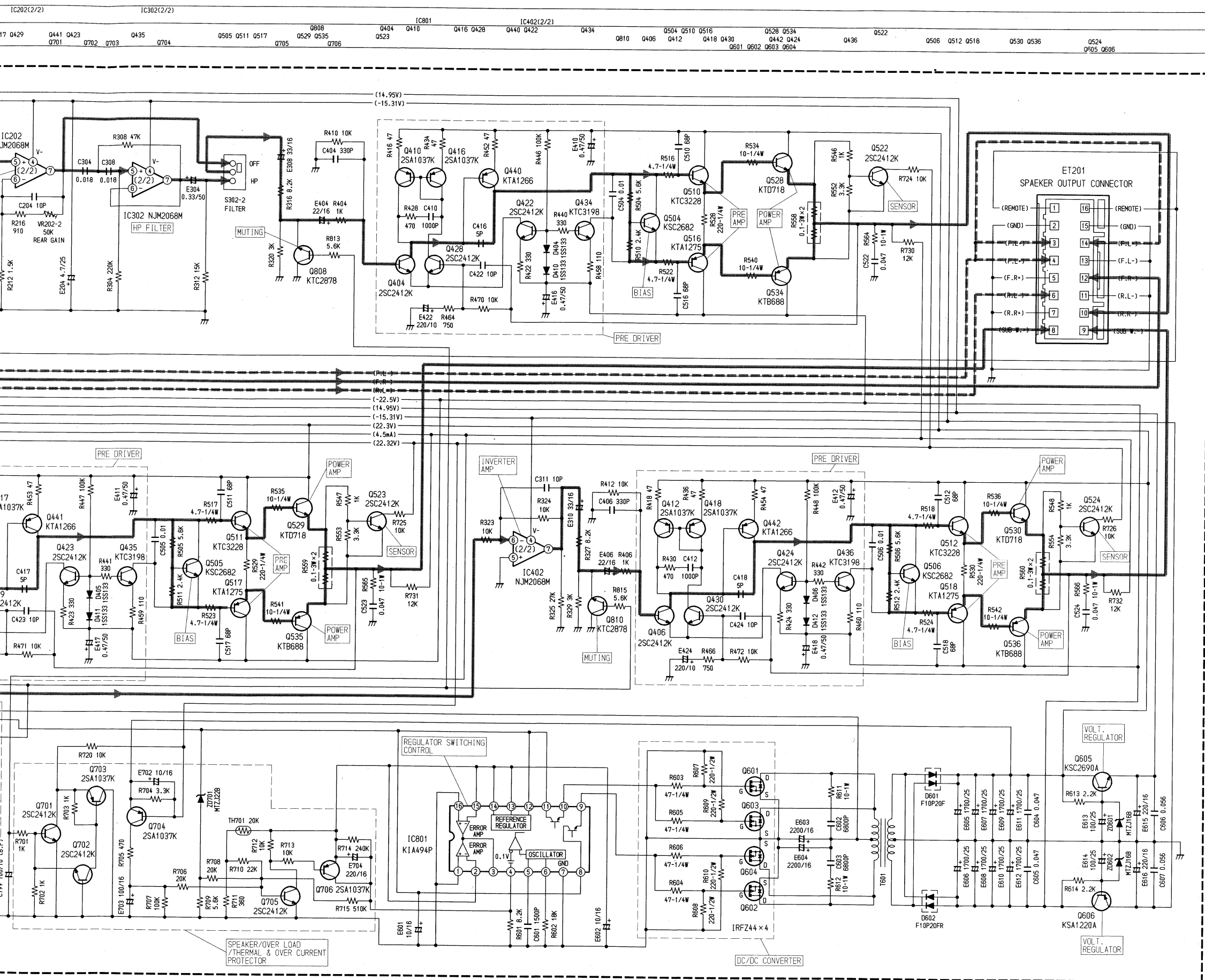
NOTE:

1. All resistance values are in ohms. $K = 1,000$
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (2/2)

IC	IC104(1/2)		IC104(2/2)		IC106(2/2)		IC202(2/2)				IC302(2/2)				IC801				IC402(2/2)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
	IC401(1/2)	IC401(2/2)	IC402(1/2)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	





IC104 IC106 (2/2) IC302 (2/2) IC401

1 46.1mV	4 -15.31V	4 -15.31V	1 -1.1mV
2 45.1mV	5 27.1mV	5 48.6mV	2 1.7mV
3 46.3mV	6 26.9mV	6 46.8mV	3 1.3mV
4 -15.31V	7 2.9mV	7 46.8mV	4 -15.31V
5 45.3mV			5 1.6mV
6 48.1mV			6 1.2mV
7 48.1mV			7 0.42mV
8 14.96V			8 14.96V

IC202 (2/2)

4 -15.31V
5 2.4mV
6 2.5mV
7 6.8mV

IC402 IC801

1 6.8mV	1 0V	9 5.64V			
2 6.8mV	2 4.91V	10 5.63V			
3 6.5mV	3 NC	11 14.08V			
4 -15.31V	4 0.16V	12 14.08V			
5 0.3mV	5 1.52V	13 4.91V			
6 1.7mV	6 3.66V	14 4.91V			
7 -5.04mV	7 2mV	15 4.91V			
8 14.96V	8 14.08V	16 0V			

	G	S	D
Q601	4.64V	0V	14.36V
Q602	4.63V	0V	14.36V
Q603	4.65V	0V	14.36V
Q604	4.63V	0V	14.36V

	E	C	B		E	C	B
Q404	-0.63V	21.5V	-29.3mV	Q517	-0.53V	-22.3V	-1.02V
Q405	-0.64V	21.6V	-29.8mV	Q518	-0.54V	-21.8V	-1.04V
Q406	-0.65V	21.4V	-30.3mV	Q522	7.3mV	22.2V	5.5mV
Q410	22.2V	21.5V	21.5V	Q523	9.8mV	22.2V	5.5mV
Q411	22.2V	21.6V	21.6V	Q524	8.5mV	22.2V	5.5mV
Q412	22.2V	21.4V	21.6V	Q528	9.1mV	22.3V	0.6V
Q416	22.2V	21.5V	21.5V	Q529	10.1mV	22.3V	0.54V
Q417	22.2V	21.6V	21.6V	Q530	8.9mV	22.3V	0.54V
Q418	22.2V	21.6V	21.6V	Q534	7.3mV	-22.3V	-0.56V
Q422	-21.84V	-0.63V	21.2V	Q535	9.8mV	-22.3V	-0.51V
Q423	-21.86V	-0.64V	-21.3V	Q536	8.5mV	-21.8V	-0.53V
Q424	-21.84V	-0.65V	21.3V	Q605	14.96V	22.3V	15.58V
Q428	-0.63V	21.5V	-19.8mV	Q606	-15.31V	-22.3V	-15.93V
Q429	-0.64V	21.6V	-20.5mV	Q701	0V	22.3V	3.15mV
Q430	-0.65V	21.6V	-21.5mV	Q702	3.15mV	22.26V	0V
Q434	-21.65V	-1.09V	-21.1V	Q703	22.3V	1.48mV	22.26V
Q435	-21.85V	-1.08V	-21.24V	Q704	22.32V	22.32V	22.32V
Q436	-21.85V	-1.08V	-21.24V	Q705	0V	4.88V	46.3V
Q440	22.2V	1.1V	21.5V	Q706	4.91V	0.16V	4.59V
Q441	22.2V	1.2V	21.6V	Q801	3.83V	9.5mV	3.8V
Q442	22.2V	1.2V	21.4V	Q802	14.39V	-2.69V	14.37V
Q504	-1.09V	1.1V	-0.45V	Q803	8.7mV	14.37V	10mV
Q505	-1.08V	1.1V	-0.45V	Q804	0V	8.7mV	0.5V
Q506	-1.08V	1.1V	-0.45V	Q808	1.5mV	0V	-2.7V
Q510	0.62V	22.3V	1.09V	Q809	1.4mV	0V	-2.7V
Q511	0.56V	22.3V	1.14V	Q810	1.4mV	0V	-2.7V
Q512	0.56V	22.3V	1.14V	Q901	14.39V	14.1V	13.55V
Q516	-0.57V	-22.3V	-1.07V	Q902	0V	23.3mV	3.92V

[Measuring Conditions]

- Power Supply Voltage : DC14.4V
- Measuring Meter : Digital Multi Meter
- Measuring Point Reference : Between Ground
- Measuring Conditions : No Signal Input

NOTE:

1. All resistance values are in ohms. $K = 1,000$
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Electrical Parts List

Resistor : Carbon resistors under 1/4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : "F=microfarads,pF=picofarads

Abbreviations			Symbol No.	Part No.	Description
RES.= Resistor	CAP.= Capacitor		Q419	48E22902S01	CP., 2SC2412K
C.F.= Carbon Film	ELY.= Electrolytic		Q420	48E22902S01	CP., 2SC2412K
M.F.= Metal Film	CER.= Ceramic		Q421	48E22902S01	CP., 2SC2412K
M.O.= Metal Oxide Film	MYL.= Mylar		Q422	48E22902S01	CP., 2SC2412K
M.P.= Metal Plate	TAN.= Tantalum		Q423	48E22902S01	CP., 2SC2412K
TR. = Transistor	POLY.= Polystyrol		Q424	48E22902S01	CP., 2SC2412K
TRANS.= Transformer	PP. = Polypropylene		Q425	48E22902S01	CP., 2SC2412K
CP. = Chip	PLT.= Polyethylene		Q426	48E22902S01	CP., 2SC2412K
	PF. = Polyester Film		Q427	48E22902S01	CP., 2SC2412K
			Q428	48E22902S01	CP., 2SC2412K
			Q429	48E22902S01	CP., 2SC2412K
			Q430	48E22902S01	CP., 2SC2412K
			Q431	48E09088S01	KTC3198
			Q432	48E09088S01	KTC3198
			Q433	48E09088S01	KTC3198
			Q434	48E09088S01	KTC3198
			Q435	48E09088S01	KTC3198
			Q436	48E09088S01	KTC3198
			Q437	48E09036S02	KTA1266
			Q438	48E09036S02	KTA1266
			Q439	48E09036S02	KTA1266
			Q440	48E09036S02	KTA1266
			Q441	48E09036S02	KTA1266
			Q442	48E09036S02	KTA1266
			Q501	48E08329S01	KSC2682
			Q502	48E08329S01	KSC2682
			Q503	48E08329S01	KSC2682
			Q504	48E08329S01	KSC2682
			Q505	48E08329S01	KSC2682
			Q506	48E08329S01	KSC2682
			Q507	48E23701S01	KTC3228
			Q508	48E23701S01	KTC3228
			Q509	48E23701S01	KTC3228
			Q510	48E23701S01	KTC3228
			Q511	48E23701S01	KTC3228
			Q512	48E23701S01	KTC3228
			Q513	48E23700S01	KTA1275
			Q514	48E23700S01	KTA1275
			Q515	48E23700S01	KTA1275
			Q516	48E23700S01	KTA1275
			Q517	48E23700S01	KTA1275
			Q518	48E23700S01	KTA1275
			Q519	48E22902S01	CP., 2SC2412K
			Q520	48E22902S01	CP., 2SC2412K
			Q521	48E22902S01	CP., 2SC2412K
			Q522	48E22902S01	CP., 2SC2412K

Symbol No.	Part No.	Description
Q523	48E22902S01	CP., 2SC2412K
Q524	48E22902S01	CP., 2SC2412K
Q525	48E20885S01	KTD718
Q526	48E20885S01	KTD718
Q527	48E20885S01	KTD718
Q528	48E20885S01	KTD718
Q529	48E20885S01	KTD718
Q530	48E20885S01	KTD718
Q531	48E20884S01	KTB688
Q532	48E20884S01	KTB688
Q533	48E20884S01	KTB688
Q534	48E20884S01	KTB688
Q535	48E20884S01	KTB688
Q536	48E20884S01	KTB688
Q601	48E23674S01	FET, IRFZ44
Q602	48E23674S01	FET, IRFZ44
Q603	48E23674S01	FET, IRFZ44
Q604	48E23674S01	FET, IRFZ44
Q605	48E10027S01	KSC2690A
Q606	48E05943S01	KSA1220A
Q701	48E22902S01	CP., 2SC2412K
Q702	48E22902S01	CP., 2SC2412K
Q703	48E22900S01	CP., 2SA1037K
Q704	48E22900S01	CP., 2SA1037K
Q705	48E22902S01	CP., 2SC2412K
Q706	48E22900S01	CP., 2SA1037K
Q801	48E22900S01	CP., 2SA1037K
Q802	48E23697S01	CP., DTA144EK
Q803	48E22555S01	CP., DTC144EK
Q804	48E22902S01	CP., 2SC2412K
Q805	48E08335S01	KTC2878
Q806	48E08335S01	KTC2878
Q807	48E08335S01	KTC2878
Q808	48E08335S01	KTC2878
Q809	48E08335S01	KTC2878
Q810	48E08335S01	KTC2878
Q901	48E22900S01	CP., 2SA1037K
Q902	48E22903S01	CP., DTC143EK
Diodes		
D401	48E22916S01	1SS133
D402	48E22916S01	1SS133
D403	48E22916S01	1SS133
D404	48E22916S01	1SS133
D405	48E22916S01	1SS133

Symbol No.	Part No.	Description
D406	48E22916S01	1SS133
D407	48E22916S01	1SS133
D408	48E22916S01	1SS133
D409	48E22916S01	1SS133
D410	48E22916S01	1SS133
D411	48E22916S01	1SS133
D412	48E22916S01	1SS133
D601	48E22154S01	F10P20F
D602	48E22155S01	F10P20FR
D801	48E22916S01	1SS133
D802	48E22916S01	1SS133
D803	48E22916S01	1SS133
D804	48E22916S01	1SS133
D805	48E23703S01	1N4003
D901	48E23703S01	1N4003
ZD601	48E22436S01	Zener, MTZJ16B
ZD602	48E22436S01	Zener, MTZJ16B
ZD701	48E08332S01	Zener, MTZJ22B
ZD801	48E23704S01	Zener, MTZJ6.2A
Transformers		
T601	01E23675S01	Assy., Power Trans
T901	25E23676S01	Choke
T902	25E23676S01	Choke
Switches		
S301	40E23679S01	SSSAF122NA (FILTER)
S302	40E23679S01	SSSAF122NA (FILTER)
Thermistor / LED		
TH701	48E20887S01	Thermistor, 20K ohm
LD901	48E20888S01	SLR54PG3 (GRN)
Capacitors		
C101	08E22899S01	CP., 100pF
E101	23E08383S08	ELY., 10μF / 16V
C102	08E22899S01	CP., 100pF
E102	23E08383S08	ELY., 10μF / 16V
C103	08E22899S01	CP., 100pF
E103	23E08383S08	ELY., 10μF / 16V
C104	08E22899S01	CP., 100pF
E104	23E08383S08	ELY., 10μF / 16V
C105	08E22899S01	CP., 100pF

MRH-F

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
E105	23E08383S08	ELY., 10 μ F / 16V	C304	08E07631S09	MYL., 0.018 μ F
C106	08E22899S01	CP., 100pF	E304	23E08383S09	ELY., 0.33 μ F / 50V
E106	23E08383S08	ELY., 10 μ F / 16V	C305	08E07631S09	MYL., 0.018 μ F
C107	08E22899S01	CP., 100pF	E305	23E08383S14	ELY., 33 μ F / 16V
E107	23E08383S08	ELY., 10 μ F / 16V	C306	08E07631S09	MYL., 0.018 μ F
C108	08E22899S01	CP., 100pF	E306	23E08383S14	ELY., 33 μ F / 16V
E108	23E08383S08	ELY., 10 μ F / 16V	C307	08E07631S09	MYL., 0.018 μ F
C109	08E22899S01	CP., 100pF	E307	23E08383S14	ELY., 33 μ F / 16V
E109	23E22967S01	ELY., 4.7 μ F / 25V	C308	08E07631S09	MYL., 0.018 μ F
C110	08E22899S01	CP., 100pF	E308	23E08383S14	ELY., 33 μ F / 16V
E110	23E22967S01	ELY., 4.7 μ F / 25V	C309	08E23699S01	TF, 0.22 μ F
C111	08E22899S01	CP., 100pF	E309	23E08383S14	ELY., 33 μ F / 16V
E111	23E22967S01	ELY., 4.7 μ F / 25V	C310	08E22435S01	TF, 0.1 μ F
C112	08E22899S01	CP., 100pF	E310	23E08383S14	ELY., 33 μ F / 16V
E112	23E22967S01	ELY., 4.7 μ F / 25V	C311	08E08423S03	CP., 10pF
C113	08E23581S01	CP., 33pF	C401	08E22079S01	CP., 330pF
E113	23E22967S01	ELY., 4.7 μ F / 25V	E401	23E08383S13	ELY., 22 μ F / 16V
C114	08E23581S01	CP., 33pF	C402	08E22079S01	CP., 330pF
E114	23E22967S01	ELY., 4.7 μ F / 25V	E402	23E08383S13	ELY., 22 μ F / 16V
C115	08E23581S01	CP., 33pF	C403	08E22079S01	CP., 330pF
C116	08E23581S01	CP., 33pF	E403	23E08383S13	ELY., 22 μ F / 16V
C117	08E23581S01	CP., 33pF	C404	08E22079S01	CP., 330pF
C118	08E23581S01	CP., 33pF	E404	23E08383S13	ELY., 22 μ F / 16V
C119	08E23581S01	CP., 33pF	C405	08E22079S01	CP., 330pF
C120	08E23581S01	CP., 33pF	E405	23E08383S13	ELY., 22 μ F / 16V
C121	08E08423S03	CP., 10pF	C406	08E22079S01	CP., 330pF
C122	08E08423S03	CP., 10pF	E406	23E08383S13	ELY., 22 μ F / 16V
C123	08E08423S03	CP., 10pF	C407	08E22081S01	CP., 1000pF
C124	08E08423S03	CP., 10pF	E407	23E08383S10	ELY., 0.47 μ F / 50V
C125	08E08423S03	CP., 10pF	C408	08E22081S01	CP., 1000pF
C126	08E08423S03	CP., 10pF	E408	23E08383S10	ELY., 0.47 μ F / 50V
C127	08E08423S03	CP., 10pF	C409	08E22081S01	CP., 1000pF
C128	08E08423S03	CP., 10pF	E409	23E08383S10	ELY., 0.47 μ F / 50V
C129	08E08423S03	CP., 10pF	C410	08E22081S01	CP., 1000pF
C201	08E08423S03	CP., 10pF	E410	23E08383S10	ELY., 0.47 μ F / 50V
E201	23E22967S01	ELY., 4.7 μ F / 25V	C411	08E22081S01	CP., 1000pF
C202	08E08423S03	CP., 10pF	E411	23E08383S10	ELY., 0.47 μ F / 50V
E202	23E22967S01	ELY., 4.7 μ F / 25V	C412	08E22081S01	CP., 1000pF
C203	08E08423S03	CP., 10pF	E412	23E08383S10	ELY., 0.47 μ F / 50V
E203	23E22967S01	ELY., 4.7 μ F / 25V	C413	08E23695S01	CP., 5pF
C204	08E08423S03	CP., 10pF	E413	23E08383S10	ELY., 0.47 μ F / 50V
E204	23E22967S01	ELY., 4.7 μ F / 25V	C414	08E23695S01	CP., 5pF
C205	08E08423S03	CP., 10pF	E414	23E08383S10	ELY., 0.47 μ F / 50V
C301	08E07631S09	MYL., 0.018 μ F	C415	08E23695S01	CP., 5pF
E301	23E08383S09	ELY., 0.33 μ F / 50V	E415	23E08383S10	ELY., 0.47 μ F / 50V
C302	08E07631S09	MYL., 0.018 μ F	C416	08E23695S01	CP., 5pF
E302	23E08383S09	ELY., 0.33 μ F / 50V	E416	23E08383S10	ELY., 0.47 μ F / 50V
C303	08E07631S09	MYL., 0.018 μ F	C417	08E23695S01	CP., 5pF
E303	23E08383S09	ELY., 0.33 μ F / 50V	E417	23E08383S10	ELY., 0.47 μ F / 50V

Symbol No.	Part No.	Description
C418	08E23695S01	CP., 5pF
E418	23E08383S10	ELY., 0.47μF / 50V
C419	08E08423S03	CP., 10pF
E419	23E08383S03	ELY., 220μF / 10V
C420	08E08423S03	CP., 10pF
E420	23E08383S03	ELY., 220μF / 10V
C421	08E08423S03	CP., 10pF
E421	23E08383S03	ELY., 220μF / 10V
C422	08E08423S03	CP., 10pF
E422	23E08383S03	ELY., 220μF / 10V
C423	08E08423S03	CP., 10pF
E423	23E08383S03	ELY., 220μF / 10V
C424	08E08423S03	CP., 10pF
E424	23E08383S03	ELY., 220μF / 10V
C501	08E20216S01	MYL., 0.01μF
C502	08E20216S01	MYL., 0.01μF
C503	08E20216S01	MYL., 0.01μF
C504	08E20216S01	MYL., 0.01μF
C505	08E20216S01	MYL., 0.01μF
C506	08E20216S01	MYL., 0.01μF
C507	08E22549S01	CP., 68pF
C508	08E22549S01	CP., 68pF
C509	08E22549S01	CP., 68pF
C510	08E22549S01	CP., 68pF
C511	08E22549S01	CP., 68pF
C512	08E22549S01	CP., 68pF
C513	08E22549S01	CP., 68pF
C514	08E22549S01	CP., 68pF
C515	08E22549S01	CP., 68pF
C516	08E22549S01	CP., 68pF
C517	08E22549S01	CP., 68pF
C518	08E22549S01	CP., 68pF
C519	08E07631S18	MYL., 0.047μF
C520	08E07631S18	MYL., 0.047μF
C521	08E07631S18	MYL., 0.047μF
C522	08E07631S18	MYL., 0.047μF
C523	08E07631S18	MYL., 0.047μF
C524	08E07631S18	MYL., 0.047μF
C601	08E07631S01	MYL., 1500pF
E601	23E08383S08	ELY., 10μF / 16V
C602	08E20912S01	MYL., 6800pF
E602	23E08383S08	ELY., 10μF / 16V
C603	08E20912S01	MYL., 6800pF
E603	23E20040S01	ELY., 2200μF / 16V
C604	08E07631S18	MYL., 0.047μF
E604	23E20040S01	ELY., 2200μF / 16V
C605	08E07631S18	MYL., 0.047μF
E605	23E23673S01	ELY., 1700μF / 25V
C606	08E20913S01	MYL., 0.056μF

Symbol No.	Part No.	Description
E606	23E23673S01	ELY., 1700μF / 25V
C607	08E20913S01	MYL., 0.056μF
E607	23E23673S01	ELY., 1700μF / 25V
E608	23E23673S01	ELY., 1700μF / 25V
E609	23E23673S01	ELY., 1700μF / 25V
E610	23E23673S01	ELY., 1700μF / 25V
E611	23E23673S01	ELY., 1700μF / 25V
E612	23E23673S01	ELY., 1700μF / 25V
E613	23E23698S01	ELY., 100μF / 25V
E614	23E23698S01	ELY., 100μF / 25V
E615	23E20210S01	ELY., 220μF / 16V
E616	23E20210S01	ELY., 220μF / 16V
E702	23E08383S08	ELY., 10μF / 16V
E703	23E08383S05	ELY., 100μF / 16V
E704	23E20210S01	ELY., 220μF / 16V
C799	23E11142S01	ELY., (B.P) 100μF / 10V
E801	23E08383S08	ELY., 10μF / 16V
E802	23E08383S08	ELY., 10μF / 16V
E803	23E08383S08	ELY., 10μF / 16V
C901	08E07631S11	MYL., 0.15μF
E901	23E20908S01	ELY., 3.3μF / 50V
C903	08E22510S01	CP., 180pF

Resistors		
(All resistors are chip 1/10W±5% unless otherwise noted.)		
R101	06E23670S01	Cement, 15 ohm 5W
R102	06E23670S01	Cement, 15 ohm 5W
R103	06E23670S01	Cement, 15 ohm 5W
R104	06E23670S01	Cement, 15 ohm 5W
R105	06E23685S01	11K ohm 1/8W
R106	06E23685S01	11K ohm 1/8W
R107	06E23685S01	11K ohm 1/8W
R108	06E23685S01	11K ohm 1/8W
R109	06E23685S01	11K ohm 1/8W
R110	06E23685S01	11K ohm 1/8W
R111	06E23685S01	11K ohm 1/8W
R112	06E23685S01	11K ohm 1/8W
R113	06E22060S01	22K ohm
R114	06E22060S01	22K ohm
R115	06E22060S01	22K ohm
R116	06E22060S01	22K ohm
R117	06E22048S01	1K ohm
R118	06E22048S01	1K ohm
R119	06E22048S01	1K ohm
R120	06E22048S01	1K ohm

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
R121	06E22048S01	1K ohm	R210	06E21164S01	1.5K ohm
R122	06E22048S01	1K ohm	R211	06E21164S01	1.5K ohm
R123	06E22048S01	1K ohm	R212	06E21164S01	1.5K ohm
R124	06E22048S01	1K ohm	R213	06E22047S01	910 ohm
R125	06E22066S01	220K ohm	R214	06E22047S01	910 ohm
R126	06E22066S01	220K ohm	R215	06E22047S01	910 ohm
R127	06E22066S01	220K ohm	R216	06E22047S01	910 ohm
R128	06E22066S01	220K ohm	R217	06E22056S01	6.8K ohm
R129	06E22066S01	220K ohm	R218	06E21164S01	1.5K ohm
R130	06E22066S01	220K ohm	R219	06E22047S01	910 ohm
R131	06E22066S01	220K ohm	R301	06E22066S01	220K ohm
R132	06E22066S01	220K ohm	R302	06E23687S01	220K ohm 1/8W
R133	06E22544S01	750 ohm	R303	06E22066S01	220K ohm
R134	06E22544S01	750 ohm	R304	06E22066S01	220K ohm
R135	06E22544S01	750 ohm	R305	06E22062S01	47K ohm
R136	06E22544S01	750 ohm	R306	06E22062S01	47K ohm
R137	06E22544S01	750 ohm	R307	06E22062S01	47K ohm
R138	06E22544S01	750 ohm	R308	06E22062S01	47K ohm
R139	06E22544S01	750 ohm	R309	06E22507S01	15K ohm
R140	06E22544S01	750 ohm	R310	06E22507S01	15K ohm
R141	06E23693S01	15K ohm	R311	06E22507S01	15K ohm
R142	06E23693S01	15K ohm	R312	06E23593S01	15K ohm 1/8W
R143	06E23693S01	15K ohm	R313	06E22057S01	8.2K ohm
R144	06E23693S01	15K ohm	R314	06E22057S01	8.2K ohm
R145	06E23693S01	15K ohm	R315	06E22057S01	8.2K ohm
R146	06E23693S01	15K ohm	R316	06E22057S01	8.2K ohm
R147	06E23693S01	15K ohm	R317	06E22951S01	3K ohm
R148	06E23693S01	15K ohm	R318	06E22951S01	3K ohm
R149	06E23693S01	15K ohm	R319	06E22951S01	3K ohm
R150	06E23693S01	15K ohm	R320	06E22951S01	3K ohm
R151	06E23693S01	15K ohm	R321	06E22952S01	5.1K ohm
R152	06E23693S01	15K ohm	R322	06E22952S01	5.1K ohm
R153	06E23693S01	15K ohm	R323	06E20903S01	10K ohm
R154	06E23693S01	15K ohm	R324	06E20903S01	10K ohm
R155	06E23693S01	15K ohm	R325	06E20904S01	27K ohm
R156	06E23693S01	15K ohm	R326	06E22057S01	8.2K ohm
R157	06E20903S01	10K ohm	R327	06E22057S01	8.2K ohm
R158	06E20903S01	10K ohm	R328	06E22951S01	3K ohm
R159	06E22060S01	22K ohm	R329	06E22951S01	3K ohm
R160	06E22060S01	22K ohm	R401	06E22048S01	1K ohm
R201	06E22055S01	4.7K ohm	R402	06E22030S01	1K ohm 1/8W
R202	06E22055S01	4.7K ohm	R403	06E22030S01	1K ohm 1/8W
R203	06E22055S01	4.7K ohm	R404	06E22048S01	1K ohm
R204	06E22055S01	4.7K ohm	R405	06E22048S01	1K ohm
R205	06E22055S01	4.7K ohm	R406	06E22048S01	1K ohm
R206	06E22055S01	4.7K ohm	R407	06E20903S01	10K ohm
R207	06E22055S01	4.7K ohm	R408	06E20903S01	10K ohm
R208	06E22055S01	4.7K ohm	R409	06E20903S01	10K ohm
R209	06E21164S01	1.5K ohm	R410	06E20903S01	10K ohm

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
R411	06E20903S01	10K ohm	R460	06E23690S01	110 ohm
R412	06E20903S01	10K ohm	R461	06E22544S01	750 ohm
R413	06E23571S01	47 ohm	R462	06E22544S01	750 ohm
R414	06E23571S01	47 ohm	R463	06E22544S01	750 ohm
R415	06E23571S01	47 ohm	R464	06E22544S01	750 ohm
R416	06E23571S01	47 ohm	R465	06E22544S01	750 ohm
R417	06E23571S01	47 ohm	R466	06E22544S01	750 ohm
R418	06E23571S01	47 ohm	R467	06E20903S01	10K ohm
R419	06E22043S01	330 ohm	R468	06E20903S01	10K ohm
R420	06E22043S01	330 ohm	R469	06E20903S01	10K ohm
R421	06E22043S01	330 ohm	R470	06E20903S01	10K ohm
R422	06E22043S01	330 ohm	R471	06E20903S01	10K ohm
R423	06E22043S01	330 ohm	R472	06E20903S01	10K ohm
R424	06E22043S01	330 ohm	R501	06E22111S01	5.6K ohm
R425	06E22505S01	470 ohm	R502	06E22111S01	5.6K ohm
R426	06E22505S01	470 ohm	R503	06E22111S01	5.6K ohm
R427	06E22505S01	470 ohm	R504	06E22111S01	5.6K ohm
R428	06E22505S01	470 ohm	R505	06E22111S01	5.6K ohm
R429	06E22505S01	470 ohm	R506	06E22111S01	5.6K ohm
R430	06E22505S01	470 ohm	R507	06E22924S01	2.4K ohm
R431	06E23571S01	47 ohm	R508	06E22924S01	2.4K ohm
R432	06E23571S01	47 ohm	R509	06E22924S01	2.4K ohm
R433	06E23571S01	47 ohm	R510	06E22924S01	2.4K ohm
R434	06E23571S01	47 ohm	R511	06E22924S01	2.4K ohm
R435	06E23571S01	47 ohm	R512	06E22924S01	2.4K ohm
R436	06E23571S01	47 ohm	R549	06E22053S01	3.3K ohm
R437	06E22043S01	330 ohm	R550	06E22053S01	3.3K ohm
R438	06E22043S01	330 ohm	R551	06E22053S01	3.3K ohm
R439	06E22043S01	330 ohm	R552	06E22053S01	3.3K ohm
R440	06E22043S01	330 ohm	R553	06E22053S01	3.3K ohm
R441	06E22043S01	330 ohm	R554	06E22053S01	3.3K ohm
R442	06E22043S01	330 ohm	R555	06E22430S01	Cement, 0.1 ohm 3W x2
R443	06E22065S01	100K ohm	R556	06E22430S01	Cement, 0.1 ohm 3W x2
R444	06E22065S01	100K ohm	R557	06E22430S01	Cement, 0.1 ohm 3W x2
R445	06E22065S01	100K ohm	R558	06E22430S01	Cement, 0.1 ohm 3W x2
R446	06E22065S01	100K ohm	R559	06E22430S01	Cement, 0.1 ohm 3W x2
R447	06E22065S01	100K ohm	R560	06E22430S01	Cement, 0.1 ohm 3W x2
R448	06E22065S01	100K ohm	R561	06E20907S01	M.O., 10 ohm 1W
R449	06E23571S01	47 ohm	R562	06E20907S01	M.O., 10 ohm 1W
R450	06E23571S01	47 ohm	R563	06E20907S01	M.O., 10 ohm 1W
R451	06E23571S01	47 ohm	R564	06E20907S01	M.O., 10 ohm 1W
R452	06E23571S01	47 ohm	R565	06E20907S01	M.O., 10 ohm 1W
R453	06E23571S01	47 ohm	R566	06E20907S01	M.O., 10 ohm 1W
R454	06E23571S01	47 ohm	R601	06E22057S01	8.2K ohm
R455	06E23690S01	110 ohm	R602	06E22059S01	18K ohm
R456	06E23690S01	110 ohm	R607	06E23702S01	M.O., 220 ohm 1/2W
R457	06E23690S01	110 ohm	R608	06E23702S01	M.O., 220 ohm 1/2W
R458	06E23690S01	110 ohm	R609	06E23702S01	M.O., 220 ohm 1/2W
R459	06E23690S01	110 ohm	R610	06E23702S01	M.O., 220 ohm 1/2W

Symbol No.	Part No.	Description
R611	06E20907S01	M.O., 10 ohm 1W
R612	06E20907S01	M.O., 10 ohm 1W
R613	06E22051S01	2.2K ohm
R614	06E22051S01	2.2K ohm
R701	06E22048S01	1K ohm
R702	06E22048S01	1K ohm
R703	06E22048S01	1K ohm
R704	06E22053S01	3.3K ohm
R705	06E22505S01	470 ohm
R706	06E22508S01	20K ohm
R707	06E22065S01	100K ohm
R708	06E22508S01	20K ohm
R709	06E22111S01	5.6K ohm
R710	06E22060S01	22K ohm
R711	06E23691S01	360 ohm
R712	06E20903S01	10K ohm
R713	06E20903S01	10K ohm
R714	06E23688S01	240K ohm 1/8W
R715	06E23692S01	510K ohm
R720	06E20903S01	10K ohm
R721	06E20903S01	10K ohm
R722	06E20903S01	10K ohm
R723	06E20903S01	10K ohm
R724	06E20903S01	10K ohm
R725	06E20903S01	10K ohm
R726	06E22034S01	10K ohm 1/8W
R727	06E23686S01	12K ohm 1/8W
R728	06E22058S01	12K ohm
R729	06E22058S01	12K ohm
R730	06E22058S01	12K ohm
R731	06E22058S01	12K ohm
R732	06E23686S01	12K ohm 1/8W
R801	06E22058S01	12K ohm
R802	06E22065S01	100K ohm
R803	06E22055S01	4.7K ohm
R804	06E22065S01	100K ohm
R805	06E22545S01	2K ohm
R806	06E22065S01	100K ohm
R807	06E22545S01	2K ohm
R808	06E22547S01	680K ohm
R809	06E22068S01	1M ohm
R810	06E22111S01	5.6K ohm
R811	06E22111S01	5.6K ohm
R812	06E22111S01	5.6K ohm
R813	06E22111S01	5.6K ohm
R814	06E22111S01	5.6K ohm
R815	06E22111S01	5.6K ohm
R816	06E22065S01	100K ohm
R817	06E22062S01	47K ohm

Symbol No.	Part No.	Description
R818	06E20903S01	10K ohm
R901	06E20903S01	10K ohm
R902	06E20903S01	10K ohm
R903	06E22509S01	150K ohm
R904	06E22053S01	3.3K ohm
R905	06E23694S01	2.7K ohm 1/4W
R906	06E23689S01	7.5 ohm
VR101	18E23671S01	Volume, 20K ohm X2 (SUB W. LP)
VR201	18E20880S01	Volume, 50K ohm X2 (FRONT GAIN)
VR202	18E20880S01	Volume, 50K ohm X2 (REAR GAIN)
VR203	18E23672S01	Volume, 50K ohm (SUB W. GAIN)
Miscellaneous		
ET101	09E23725S01	SPEAKER LEVEL INPUT CONNECTOR 8P
ET201	30E23731S01	SPEAKER OUTPUT CONNECTOR 16P
ET601	29E23680S01	POWER SUPPLY TERMINAL
F601	65S58596F07	Fuse, Auto 25A
JK101	09E22143S01	LINE LEVEL INPUT RCA JACK (FRONT)
JK102	09E22143S01	LINE LEVEL INPUT RCA JACK (REAR)

Cabinet Assembly Parts List

NOTE: No parts number on parts list are not supplied.

Symbol No.	Index	Part No.	Description	Symbol No.	Index	Part No.	Description
1	5-E	07E23830S01	Main Heat Sink				
4	1-C	15E23710S01	Cover, Bottom				
8	2-E	07E11146S01	Bracket, Transister				
9	4-E	43E23787S01	Holder, LED				
10	3-D	15E11445S01	Cover, Switch				
11	4-D	07E11460S01	Support, P.C.Board				
12	4-E	61E23711S01	Lens, LED				
14	4-G	03E09416S09	Screw, TPG - TPT (M3X10)				
15	4-G	03E23705S01	Screw, TPG - TPT (M2X6)				
16	4-E	03E23706S01	Screw, TPG - TPT (M2.6X6)				
17	1-F	03E23707S01	Screw, MCH - TPT (M2.6X5)				
18		03E09417S10	Screw, TPG - TPT (M3X10)				
19		03E23708S01	Screw, TPG - TPT (M3X10)				
20		03E23709S01	Screw, TPG - TPT (M2.6X8)				
21		03E20922S01	Screw, TPG - TPT (M3X11)				
22		03E20923S01	Screw, TPG - TPT (M3X9)				
24		14E11487S01	Insulator, Sheet - B				
25	3-F	14E20977S01	Insulator, Sheet - A				
26	3-C	03E22669S01	Screw, TPG (M3X8)				
27	3-D	64E23788S01	Plate, Jump - A				
28	2-D	64E23789S01	Plate, Jump (A)				
29	3-E	64E23790S01	Plate, Jump				
32		29E23793S01	Lug, GND				
34	2-A	30E23681S01	Wire, Shield (To CB101/CH101)				
35	2-B	30E23682S01	Wire, Shield (To CB102/CH102)				
36	2-B	30E23683S01	Wire, Shield (To CB103/CH103)				
37	2-B	30E23684S01	Wire, Shield (To CB104/CH104)				

Exploded View (Cabinet)

1

2

3

4

5

A

B - 21 -

C

D

E

F - 22 -

G

